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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,981	01/29/2004	Theodore J. Krellner	133073	1980

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EXAMINER	
BARTON, JEFFREY THOMAS	
ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/707,981	KRELLNER ET AL.	
	Examiner	Art Unit	
	Jeffrey T. Barton	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5 and 9-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5, and 9-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 28 December 2007 does not place the application in condition for allowance.

Status of Rejections Pending Since the Office Action of 1 October 2007

2. The rejection of claim 1 under 35 U.S.C. §102(e) as anticipated by Lambert et al is maintained.

3. The rejection of claim 5 under 35 U.S.C. §103(a) as unpatentable over Lambert et al in view of Watanabe et al is maintained.

4. All other previous rejections are withdrawn due to Applicant's amendment.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Lambert et al. (US 6,828,560)

Regarding claim 1, Lambert et al disclose a thermal detection device (Figure 8) comprising first and second thermocouples as claimed (Column 5, lines 52-55; Figure 1, thermocouples 18); a thermal absorber as claimed (Absorber 14); a diaphragm member as claimed (Membrane 16); a support rim as claimed (Frame 12) having a first cavity with a predetermined maximum width; a metal base header (202, formed from metal; Column 6, lines 2-4) supporting the support rim, the metal base header having a second cavity in thermal communication with the first cavity via membrane 16, and having second predetermined maximum width that is greater than the first predetermined maximum width (Figure 8); and wherein the thermocouples generate a voltage as claimed. (Column 3, lines 4-12)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert et al.

Lambert et al disclose a thermal detection device as described above in addressing claim 1.

Lambert et al is silent concerning the depth of the second cavity.

However, the Examiner notes that in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In this case, depths such as those claimed would reasonably be expected to provide a concentration effect precisely as described by Lambert et al. Furthermore, a skilled

artisan would have been able to select any desired thickness of portion 202, in order to achieve the desired level of concentration.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert et al in view of Watanabe et al. (US 5,056,929)

Lambert et al disclose an apparatus as described above in addressing claim 1. They also disclose that absorber 14 is prepared in a conventional manner. (Column 3, lines 3-4)

Lambert et al do not explicitly disclose the thermal absorber being a black body.

Watanabe et al teach that black body absorbers for thermopile-type infrared sensors are conventional in the art. (Column 1, lines 40-61)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Lambert et al by specifically using a black body as the absorber, as taught by Watanabe et al, because the utility of black bodies as infrared absorbers in thermopile infrared sensors was conventional in the art, as evidenced by the teaching of Watanabe et al. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

12. Claims 1, 5, and 9-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al (US 5,693,942) in view of Watanabe et al.

Regarding claim 1, Endo et al teaches a thermal detection device (Figure 3B) comprising an infrared detector portion (20) positioned on a diaphragm member as claimed (Membrane visible in figure); a support rim as claimed (10) having a first cavity with a predetermined maximum width; a metal base header (2, formed from metal; Column 4, lines 43-45) supporting the support rim, the metal base header having a second cavity (6a) in communication with the first cavity, and having second predetermined maximum width that is at least as large as the first predetermined maximum width (Figure 3B).

Regarding claim 11, Endo et al teach a cap having a window as claimed. (Cap 4 with window 3. (Figure 3B)

Endo et al teach that the detector is a thermally sensitive resistor film. (Abstract) Endo et al also disclose that such resistors and thermocouples are conventional infrared detectors in such devices. (Column 1, lines 23-27)

Watanabe et al teach an infrared sensor of similar design (Figures 3-7) having first and second thermocouples as claimed, a thermal absorber in communication with the thermocouples, and wherein a diaphragm member supported by a silicon rim supports the detector components, as in Endo et al. (Figures 3-7; Column 3, line 66-Column 4, line 12) Such a thermopile generates a voltage as claimed. Specific to claim 5, the thermal absorber of Watanabe et al is a black body. (Column 4, lines 10-12) Watanabe et al further teach that thermistors and thermopiles are conventional infrared sensors known and commonly used in the art. (Column 1, lines 11-13)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the infrared detector of Endo et al by replacing the resistance-type infrared sensor with a thermopile-type sensor taught by Watanabe et al, because Watanabe et al teach that this sensor design is accurate, and can be manufactured comparably easily. (Column 2, lines 54-59) In addition, both references disclose that resistance-based and thermopile-based infrared detection is conventional in the art, and one of ordinary skill in the art would have been able to select any such known detector type, with the reasonable expectation of success. The combination would have predictably resulted in a functioning infrared detector. Furthermore, a skilled artisan would have recognized that the advantage provided by the cavity within body 2 of Endo et al, namely improved thermal insulation of the absorber from the base (Endo et al, Column 3, lines 9-20) is equally desirable in conjunction with a thermopile sensor, and would thus have been motivated to use a thermopile sensor in the system of Endo et al, with the reasonable expectation of producing an improved thermopile sensor.

Regarding claims 9 and 10, the Examiner notes that in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

In addition, the selection of a particular depth of the recess is considered to have been a matter of optimization, within the abilities of on having ordinary skill in the art.

Response to Arguments

13. Applicant's arguments filed 28 December 2007 have been fully considered but they are not persuasive.

Applicant argues that Lambert et al does not provide any teaching the instant metal base header. The Examiner respectfully disagrees. As pointed out above, metal body 202 shown in Figure 8 of Lambert et al is considered to read on the structure of the claim as amended.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Jeffrey T. Barton whose telephone number is (571)272-1307. The examiner can normally be reached on M-F 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nam X Nguyen/
Supervisory Patent Examiner, Art Unit 1753

JTB
21 March 2008